

CLAIM AMENDMENTS

- 1 1. (Currently Amended) A method of determining a multilayer switching path for a
2 flow between a source device and a destination device in a switched network, the
3 method comprising the computer-implemented steps of:
4 determining a Layer 3 path and a Layer 2 path through the switched network from
5 the source device to the destination device;
6 selecting each route processor of the switched network that is in the Layer 3 path
7 and that appears on ~~[[a]]~~ the Layer 2 path that is associated with the source
8 device and the destination device and that leads to and emanates from the
9 route processor;
10 selecting, for each selected route processor, a switch in the switched network that
11 satisfies a pre-determined set of criteria as a relevant switch engine that
12 multilayer switches the selected route processor;
13 creating and storing information that defines a multilayer switching path and that
14 includes information identifying the source device, destination device, and
15 each selected switch.
- 1 2. (Currently Amended) A method as recited in Claim 1, wherein selecting the
2 switch that satisfies the pre-determined set of criteria comprises identifying one or
3 more switches in the switched network that are configured as switch engines,
4 associated with the selected route processor, and included in the Layer 2 ~~paths~~
5 path leading to and emanating from the selected route processor.
- 1 3. (Currently Amended) A method as recited in Claim 2, wherein selecting the
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine
3 further comprises selecting from the ~~set of~~ one or more switches as the relevant
4 switch engine the switch that contains an MLS-entry that matches the flow
5 between the source device and the destination device when there is only one
6 switch that contains the MLS-entry that matches the flow.

- 1 4. (Currently Amended) A method as recited in Claim 3, wherein selecting the
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine
3 further comprises selecting from the ~~set of~~ one or more switches as the relevant
4 switch engine the switch that contains an MLS-entry that matches the flow
5 between the source device and the destination device and that is the farthest away
6 on the Layer 2 path from the selected route processor when there is more than one
7 switch that contains the MLS-entry that matches the flow.
- 1 5. (Currently Amended) A method as recited in Claim 2, further comprising
2 establishing ~~[[a]]~~ the flow between the source device and the destination device
3 when no flow exists between the source device and destination device during
4 determination of the multilayer switching path.
- 1 6. (Original) A method as recited in Claim 5, wherein establishing the flow between
2 the source device and the destination device further comprises sending packets
3 from the source device to the destination device when the source device is not
4 remote.
- 1 7. (Currently Amended) A method as recited in Claim 5, wherein establishing the
2 flow between the source device and the destination device further comprises
3 sending packets from a network management station when the source device is
4 remote, ~~and such that~~ wherein the packets that are sent from the network
5 management station traverse the relevant switch engine for the selected route
6 processor.
- 1 8. (Original) A method as recited in Claim 5, wherein establishing the flow between
2 the source device and the destination device further comprises sending packets
3 from any route processor that is upstream from the selected route processor to the
4 destination device when the source device is remote.

- 1 9. (Original) A method as recited in Claim 5, wherein establishing the flow between
2 the source device and the destination device further comprises sending packets
3 from any route processor that is upstream from the selected route processor to the
4 destination device when the source device is remote and when the packets that are
5 sent from a network management station do not traverse the relevant switch
6 engine for the selected route processor.
- 1 10. (Currently Amended) A computer-readable medium comprising one or more
2 sequences of instructions for determining a multilayer switching path for a flow
3 between a source device and a destination device in a switched network, which
4 instructions, when executed by one or more processors, cause the one or more
5 processors to carry out the steps of:
6 determining a Layer 3 path and a Layer 2 path through the switched network from
7 the source device to the destination device;
8 selecting each route processor of the switched network that is in the Layer 3 path
9 and that appears on the Layer 2 path that is associated with the source
10 device and the destination device and that leads to and emanates from the
11 route processor;
12 selecting, for each selected route processor, a switch in the switched network that
13 satisfies a pre-determined set of criteria as a relevant switch engine that
14 multilayer switches the selected route processor;
15 creating and storing information that defines a multilayer switching path and that
16 includes information identifying the source device, destination device, and
17 each selected switch.

- 1 11. (Currently Amended) A computer-readable medium as recited in Claim 10,
2 wherein selecting the switch that satisfies the pre-determined set of criteria
3 comprises identifying one or more switches in the switched network that are
4 configured as switch engines, associated with the selected route processor, and
5 included in the Layer 2 paths path leading to and emanating from the selected
6 route processor.
- 1 12. (Currently Amended) A computer-readable medium as recited in Claim 11,
2 wherein selecting the switch that satisfies the pre-determined set of criteria as the
3 relevant switch engine further comprises selecting from the ~~set of~~ one or more
4 switches as the relevant switch engine the switch that contains an MLS-entry that
5 matches the flow between the source device and the destination device when there
6 is only one switch that contains the MLS-entry that matches the flow.
- 1 13. (Currently Amended) A computer-readable medium as recited in Claim 12,
2 wherein selecting the switch that satisfies the pre-determined set of criteria as the
3 relevant switch engine further comprises selecting from the ~~set of~~ one or more
4 switches as the relevant switch engine the switch that contains an MLS-entry that
5 matches the flow between the source device and the destination device and that is
6 the farthest away on the Layer 2 path from the selected route processor when there
7 is more than one switch that contains the MLS-entry that matches the flow.
- 1 14. (Currently Amended) A computer-readable medium as recited in Claim 11,
2 further comprising establishing ~~[[a]]~~ the flow between the source device and the
3 destination device when no flow exists between the source device and destination
4 device during determination of the multilayer switching path.
- 1 15. (Original) A computer-readable medium as recited in Claim 14, wherein
2 establishing the flow between the source device and the destination device further
3 comprises sending packets from the source device to the destination device when
4 the source device is not remote.

- 1 16. (Currently Amended) A computer-readable medium as recited in Claim 14,
2 wherein establishing the flow between the source device and the destination
3 device further comprises sending packets from a network management station
4 when the source device is remote, ~~and such that~~ wherein the packets that are sent
5 from the network management station traverse the relevant switch engine for the
6 selected route processor.
- 1 17. (Original) A computer-readable medium as recited in Claim 14, wherein
2 establishing the flow between the source device and the destination device further
3 comprises sending packets from any route processor that is upstream from the
4 selected route processor to the destination device when the source device is
5 remote.
- 1 18. (Original) A computer-readable medium as recited in Claim 14, wherein
2 establishing the flow between the source device and the destination device further
3 comprises sending packets from any route processor that is upstream from the
4 selected route processor to the destination device when the source device is
5 remote and when the packets that are sent from a network management station do
6 not traverse the relevant switch engine for the selected route processor.
- 1 19. (Currently Amended) An apparatus for determining a multilayer switching path
2 for a flow between a source device and a destination device in a switched
3 network, the apparatus comprising:
4 means for determining a Layer 3 path and a Layer 2 path through the switched
5 network from the source device to the destination device;
6 means for selecting each route processor of the switched network that is in the
7 Layer 3 path and that appears on [[a]] the Layer 2 path that is associated
8 with the source device and the destination device and that leads to and
9 emanates from the route processor;

10 means for selecting, for each selected route processor, a switch in the switched
11 network that satisfies a pre-determined set of criteria as a relevant switch
12 engine that multilayer switches the selected route processor;
13 means for creating and storing information that defines a multilayer switching
14 path and that includes information identifying the source device,
15 destination device, and each selected switch.

1 20. (Currently Amended) An apparatus for determining a multilayer switching path for a
2 flow between a source device and a destination device in a switched network, the
3 apparatus comprising:
4 a network interface that receives one or more messages from the switched network;
5 one or more processors coupled to the network interface to receive the messages
6 therefrom;
7 a memory accessible to the one or more processors; and
8 one or more sequences of instructions stored in the memory which, when executed by
9 the one or more processors, cause the one or more processors to carry out the
10 steps of:
11 determining a Layer 3 path and a Layer 2 path through the switched network
12 from the source device to the destination device;
13 selecting each route processor of the switched network that is in the Layer 3
14 path and that appears on the Layer 2 path that is associated with
15 the source device and the destination device and that leads to and
16 emanates from the route processor;
17 selecting, for each selected route processor, a switch in the switched network
18 that satisfies a pre-determined set of criteria as a relevant switch engine
19 that multilayer switches the selected route processor;
20 creating and storing information that defines a multilayer switching path and
21 that includes information identifying the source device, destination
22 device, and each selected switch.

- 1 21. (New) An apparatus as recited in Claim 19, wherein the means for selecting the
2 switch that satisfies the pre-determined set of criteria comprises means for identifying
3 one or more switches in the switched network that are configured as switch engines,
4 associated with the selected route processor, and included in the Layer 21 path leading
5 to and emanating from the selected route processor.
- 1 22. (New) An apparatus as recited in Claim 21, wherein the means for selecting the
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine
3 further comprises means for selecting from the one or more switches as the relevant
4 switch engine the switch that contains an MLS-entry that matches the flow between
5 the source device and the destination device when there is only one switch that
6 contains the MLS-entry that matches the flow.
- 1 23. (New) An apparatus as recited in Claim 22, wherein the means for selecting the
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine
3 further comprises means for selecting from the one or more switches as the relevant
4 switch engine the switch that contains an MLS-entry that matches the flow between
5 the source device and the destination device and that is the farthest away on the Layer
6 21 path from the selected route processor when there is more than one switch that
7 contains the MLS-entry that matches the flow.
- 1 24. (New) An apparatus as recited in Claim 21, further comprising means for establishing
2 the flow between the source device and the destination device when no flow exists
3 between the source device and destination device during determination of the
4 multilayer switching path.
- 1 25. (New) An apparatus as recited in Claim 24, wherein the means for establishing the
2 flow between the source device and the destination device further comprises means for
3 sending packets from the source device to the destination device when the source
4 device is not remote.

- 1 26. (New) An apparatus as recited in Claim 24, wherein the means for establishing the
2 flow between the source device and the destination device further comprises means for
3 sending packets from a network management station when the source device is remote,
4 wherein the packets that are sent from the network management station traverse the
5 relevant switch engine for the selected route processor.
- 1 27. (New) An apparatus as recited in Claim 24, wherein the means for establishing the
2 flow between the source device and the destination device further comprises means for
3 sending packets from any route processor that is upstream from the selected route
4 processor to the destination device when the source device is remote.
- 1 28. (New) An apparatus as recited in Claim 24, wherein the means for establishing the
2 flow between the source device and the destination device further comprises means for
3 sending packets from any route processor that is upstream from the selected route
4 processor to the destination device when the source device is remote and when the
5 packets that are sent from a network management station do not traverse the relevant
6 switch engine for the selected route processor.
- 1 29. (New) An apparatus as recited in Claim 20, wherein selecting the switch that satisfies
2 the pre-determined set of criteria comprises identifying one or more switches in the
3 switched network that are configured as switch engines, associated with the selected
4 route processor, and included in the Layer 29 path leading to and emanating from the
5 selected route processor.
- 1 30. (New) An apparatus as recited in Claim 29, wherein selecting the switch that satisfies
2 the pre-determined set of criteria as the relevant switch engine further comprises
3 selecting from the one or more switches as the relevant switch engine the switch that
4 contains an MLS-entry that matches the flow between the source device and the
5 destination device when there is only one switch that contains the MLS-entry that
6 matches the flow.

- 1 31. (New) An apparatus as recited in Claim 30, wherein selecting the switch that satisfies
2 the pre-determined set of criteria as the relevant switch engine further comprises
3 selecting from the one or more switches as the relevant switch engine the switch that
4 contains an MLS-entry that matches the flow between the source device and the
5 destination device and that is the farthest away on the Layer 29 path from the selected
6 route processor when there is more than one switch that contains the MLS-entry that
7 matches the flow.
- 1 32. (New) An apparatus as recited in Claim 29, further comprising establishing the flow
2 between the source device and the destination device when no flow exists between the
3 source device and destination device during determination of the multilayer switching
4 path.
- 1 33. (New) An apparatus as recited in Claim 32, wherein establishing the flow between the
2 source device and the destination device further comprises sending packets from the
3 source device to the destination device when the source device is not remote.
- 1 34. (New) An apparatus as recited in Claim 32, wherein establishing the flow between the
2 source device and the destination device further comprises sending packets from a
3 network management station when the source device is remote, wherein the packets
4 that are sent from the network management station traverse the relevant switch engine
5 for the selected route processor.
- 1 35. (New) An apparatus as recited in Claim 32, wherein establishing the flow between the
2 source device and the destination device further comprises sending packets from any
3 route processor that is upstream from the selected route processor to the destination
4 device when the source device is remote.

- 1 36. (New) An apparatus as recited in Claim 32, wherein establishing the flow between the
2 source device and the destination device further comprises sending packets from any
3 route processor that is upstream from the selected route processor to the destination
4 device when the source device is remote and when the packets that are sent from a
5 network management station do not traverse the relevant switch engine for the selected
6 route processor.